Anchorage Water & Wastewater Utility

Treatment Division

Mayor
Dan Sullivan

Board Chair
David M. Richards

February 4, 2014

CERTIFIED MAIL: 7011-3500-0001-9024-8184
Return Receipt Requested

Environmental Protection Agency, Region 10
NPDES Compliance Unit
1200 Sixth Avenue (OW-133)
Seattle, WA 98101

Subject: **40 CFR Part 503 Annual Report for Calendar Year 2013**
John M. Asplund Water Pollution Control Facility
NPDES Permit No. AK-002255-1

The following information is submitted as required by 40 CFR Part 503.48.

§503.47 (b) The concentration of lead, arsenic, cadmium, chromium, and nickel in the sewage sludge fed to the sewage sludge incinerator.

Reference attached **Table 1 - Sludge Monitoring Report**.

The required monitoring frequency for these metals is once every 60 days.

§503.47 (c) The total hydrocarbons concentrations in the exit gas from the sewage sludge incinerator stack.

Reference attached **Table 2 - Incinerator Exit Gas: THC, Oxygen, Temperature, Moisture**. Any analyzer issues during the reporting period are noted below.

Summary of THC analyzer downtime:

Date	Start Time	End Time	Duration
1/1/13-1/30/13	0000	1500	29.6 Days
The THC analyzer is not working properly and was sent to Horiba Instruments Inc. for repair. The THC analyzer is Out of service starting 1/1/2013 at 00:00 AM and ending 01/30/2013 at 1500 hours.			
Date	Start Time	End Time	Duration
7/31/13 – 8/19/13	0612	0900	19.1 Days
THC analyzer was out-of-service due to a bad circuit board in the O2 analyzer.			

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Date	Start Time	End Time	Duration
8/30/13	1624	2103	4 hours, 39 minutes
The THC analyzer is not working due to a loss of power and the cause was the UPS for the analyzer had failed. The THC analyzer was out of service starting 8/30/2013 at 1624 hours and ending 8/30/2013 at 2103 hours.			

Summary of Oxygen analyzer down-time:

Date	Start Time	End Time	Duration
1/1/13-1/30/13	0000	1500	29.6 Days
The O2 analyzer did not function properly during the period that the THC analyzer was removed for repair. The contractor was unable to correct this problem with the O2 analyzer.			
Date	Start Time	End Time	Duration
7/31/13 – 8/19/13	0612	0900	19.1 Days
The O2 analyzer is not working properly due to a bad circuit board and the cause is unknown.			
Date	Start Time	End Time	Duration
8/30/13	1624	2103	4 hours, 39 minutes
The O2 analyzer is not working due to a loss of power and the cause was the UPS for the analyzer had failed.			

§503.47 (d) Information that indicates the requirements in the National Emission Standard for beryllium in subpart C of 40 CFR Part 61 are met.

Reference attached **Table 1 - Sludge Monitoring Report**.

§503.47 (e) Information that indicates that requirements in the National Emission Standard for mercury in subpart E of 40 CFR Part 61 are met.

Reference attached **Table 1 - Sludge Monitoring Report**.

§503.47 (f) The operating combustion temperatures for the sewage sludge incinerator.

Reference attached **Table 3 – Incinerator Operating Combustion Temperatures**.

40 CFR Part 503.45(e) states: *"Operation of a sewage sludge incinerator shall not cause the operating combustion temperature for the sewage sludge incinerator to exceed the performance test combustion temperature by more than 20 percent."* The combustion temperature (as defined in 40 CFR Part 503.45(k)) was 1590 degrees F during the latest Asplund incinerator source test completed September 8, 2012. Accordingly, the maximum incinerator combustion zone temperature shall not exceed 1908 degrees F. This temperature limit was not exceeded during the reporting period.

§503.47 (g) Values for the air pollution control device operating parameters.

Reference attached **Table 4 - Total Scrubber Differentials**.

§503.47 (h) The oxygen concentration and information used to measure moisture content in the exit gas from the sewage sludge incinerator stack.

Reference attached **Table 2 - Incinerator Exit Gas: THC, Oxygen, Temperature, Moisture**. Any analyzer issues during the reporting period were noted previously, in the *§503.47 (c)* report section.

The following information is submitted as required by the Asplund NPDES Permit No. AK-002255-1, Effective August 2, 2000.

Condition I.D.11. The permittee shall submit a report to EPA on February 19 of each year that includes the following information:
a. Amount of sludge (tons, dry weight) delivered to each recipient facility.

Reference attached **Table 5 - Amount of Sludge Delivered to Anchorage Regional Landfill**. The Anchorage Regional Landfill was the only recipient facility during this reporting period.

b. Results of free liquid tests, and results of any other tests of the sludge such as for hazardous characteristics, total metals, or other parameters used to determine compliance with the requirements of this permit.

Reference attached **Table 1 - Sludge Monitoring Report**.

No tests for free liquid or hazardous characteristics were done during the calendar year covered by this report. These tests were completed previously to the satisfaction of the Anchorage Regional Landfill operator. These tests will be run again in the future if AWWU has reason to believe that sludge quality has changed significantly in regards to landfilling limitations or upon request from the landfill operator.

If you need further information, please contact me by phone at (907) 564-2799 or via email at david.persinger@awwu.biz .

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

David A. Persinger, P.E.
Treatment Division Director, AWWU

cc: Jeff Axmann, Superintendent, Asplund WPCF, AWWU

Attachment: WIMS Report (7 pages) containing:
Table 1 - Sludge Monitoring Report
Table 2 – Incinerator Exit Gas: THC, Oxygen, Temperature, Moisture
Table 3 – Incinerator Operating Combustion Temperatures
Table 4 – Total Scrubber Differentials
Table 5 - Amount of Sludge Delivered to Anchorage Regional Landfill

Table 1 - Sludge Monitoring Report

DATE	Units	mg/kg dry weight	mg/kg dry weight	mg/kg dry weight	mg/kg dry weight	mg/kg dry weight	mg/kg dry weight	mg/kg dry weight
	Method a)	SW6020/6010B	SW6020/6010B	SW6020/6010B	SW6020/6010B	SW6020/6010B	SW6020/6010B	SW7471A/7471B
	Sample Type	24 HC(8Grabs)	24 HC(8Grabs)	24 HC(8Grabs)	24 HC(8Grabs)	24 HC(8Grabs)	24 HC(8Grabs)	24 HC(8Grabs)
	Monitoring Frequency e)	once/60 days	once/60 days	once/60 days	once/60 days	once/60 days	once/60 days	once/60 days
	Site Specific Limit b)	1463	c) 2014	188919	28500	498653	98957	d) 129
02/19/13		2.8	0.05	0.8	12.2	8.64	9.19	0.61
04/23/13		3.5	0.12	1.31	19.0	17.7	20.2	0.66
06/11/13		4.60	0.071	1.110	12.1	18.0	10.4	0.827
06/18/13		4.2	0.06	1.20	16.00	14.4	11.7	1.3
08/27/13		5.050	0.07	2.21	12.2	17.6	11.7	0.610
08/30/13		4.4	0.08	1.34	17.1	11.7	14.4	0.45
10/04/13		5.2	0.08	1.5	16.00	13.00	15.00	0.51
12/01/13		3.3	0.07	0.96	15.9	12.3	12.7	0.46
MIN f)		2.8	0.05	0.8	12.1	8.64	9.2	0.45
MAX		5.2	0.12	2.2	19.0	18	20.2	1.30
AVE g)		4.1	0.07	1.3	15.1	14.2	13.2	0.68

Footnotes:

a) SW = Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition, EPA. Samples for total metals analysis, with the exception of mercury, were prepared according to EPA method 3050B, SW-846.

b) Site-specific sludge limits calculated by ASRC Energy Services February 2014, based primarily on September 2012 Asplund Incinerator Source Test.

c) Beryllium emissions shall not exceed 10 grams per day. With a control efficiency of 0.9998 at the maximum sludge feed rate, a sludge concentration of 2014 milligrams per dry kilogram of sludge will not result in a violation of the limit.

d) Mercury emissions shall not exceed 3,200 grams per day. With a control efficiency of 0.0 at the maximum sludge feed rate, a sludge concentration of 129 milligrams per dry kilogram of sludge will not result in a violation of the limit.

e) Monitoring frequencies required by 40 CFR Part 503 for incineration are once per 60 days for arsenic, cadmium, chromium, lead, and nickel. Mercury is at least once per year. Frequency for beryllium is not specified. AWWU has chosen to test mercury and beryllium more frequently than required to be consistent with the other metals.

f) < (values) = Not-Detected or Estimated - value after "<" symbol is either the Method Detection Limit (MDL) for non-detected quantities or the Method Reporting Limit (MRL) for estimated quantities.

g) For yearly average calculations, the MDL or MRL is appropriately used for all values that are not-detected or reported as estimates, respectively.

Table 2 -- Incinerator Exit Gas: THC, Oxygen, Temperature, Moisture

Month	Incinerator Exit Gas THC (ppm)	Incinerator Exit Gas Oxygen (%)	Incinerator Exit Gas Temp (F)	Incinerator Exit Gas Moisture (%)	Incinerator Corrected Exit Gas THC (ppm)	Incinerator Corrected Exit Gas Oxygen (%)
	Average	Average	Average	Average	Average	Average
Jan 2013	2.1	7.54	74.5	2.89	0.9	7.02
Feb 2013	4.3	7.94	73.0	2.74	1.5	7.72
Mar 2013	6.0	7.96	74.1	2.85	2.2	7.73
Apr 2013	24.7	7.89	76.5	3.09	8.9	7.64
May 2013	26.9	7.86	77.9	3.24	9.6	7.61
Jun 2013	5.0	7.81	82.5	3.73	1.8	7.52
Jul 2013	5.2	7.75	86.8	4.32	1.9	7.42
Aug 2013	8.0	7.80	91.3	4.97	2.3	7.53
Sep 2013	14.1	7.91	88.7	4.67	5.3	7.54
Oct 2013	5.9	7.68	91.5	4.97	2.1	7.30
Nov 2013	7.8	8.16	82.4	3.75	2.9	7.86
Dec 2013	10.4	8.01	81.4	3.64	3.8	7.72

Table Notes:

This report only includes values from time periods during which biosolids are being incinerated; values from when the incinerator is in warm standby mode are not included.

Table 3 -- Incinerator Operating Combustion Temperatures

Date	Jan 2013 Temp (F)	Feb 2013 Temp (F)	Mar 2013 Temp (F)	Apr 2013 Temp (F)	May 2013 Temp (F)	Jun 2013 Temp (F)	Jul 2013 Temp (F)	Aug 2013 Temp (F)	Sep 2013 Temp (F)	Oct 2013 Temp (F)	Nov 2013 Temp (F)	Dec 2013 Temp (F)
1	1,572	1,519	1,540	1,535	1,554	1,570	1,588	1,558	1,530	1,542	1,609	1,678
2	1,555	1,516	1,546	1,543	1,559	1,540	1,571	1,583	1,551	1,562	1,623	1,676
3	1,533	1,514	1,542	1,552	1,545	1,553	1,575	1,586	1,533	1,532	1,592	1,729
4	1,490	1,534	1,542	1,559	1,543	1,543	1,567	1,550	1,561	1,525	1,592	1,613
5	1,537	1,555	1,563	1,557	1,539	1,546	1,557	1,544	1,568	1,520	1,610	1,610
6	1,539	1,535	1,532	1,555	1,565	1,554	1,543	1,562	1,559	1,557	1,610	1,628
7	1,497	1,499	1,509	1,528	1,567	1,572	1,508	1,572	1,562	1,544		1,610
8	1,486	1,507	1,521	1,557	1,552	1,588	1,540	1,609	1,533	1,530		1,579
9	1,495	1,468	1,529	1,560	1,582	1,571	1,515	1,621	1,548	1,558		1,507
10	1,518	1,476	1,533	1,559	1,557	1,579	1,534	1,612	1,560	1,579		1,557
11	1,536	1,518	1,533	1,560	1,570	1,577	1,527	1,586	1,562	1,589		1,585
12	1,537	1,503	1,533	1,575	1,552	1,546	1,554	1,629	1,597	1,600		1,655
13	1,550	1,561	1,533	1,582	1,548	1,581	1,545	1,614	1,643	1,575		1,634
14	1,519	1,558	1,545	1,564	1,546	1,581	1,540	1,587	1,605	1,576		1,631
15	1,596	1,545	1,549	1,553	1,556	1,590	1,591	1,572	1,574	1,584		1,634
16	1,551	1,560	1,548	1,558	1,552	1,560	1,586	1,560	1,521	1,581		1,631
17	1,571	1,557	1,547	1,556	1,551	1,566	1,557	1,586	1,460	1,604	1,515	1,644
18	1,565	1,545	1,554	1,559	1,555	1,559	1,573	1,598	1,542	1,617	1,542	1,609
19	1,524	1,499	1,557	1,564	1,561	1,571	1,593	1,582	1,511	1,585	1,523	1,605
20	1,542	1,558	1,549	1,566	1,558	1,557	1,622	1,542	1,501	1,589	1,546	1,630
21	1,504	1,530	1,552	1,564	1,547	1,551	1,586	1,610	1,493	1,601	1,650	1,600
22	1,567	1,541	1,544	1,557	1,548	1,548	1,565	1,601	1,481	1,597	1,553	1,604
23	1,574	1,544	1,547	1,560	1,548	1,538	1,578	1,598	1,535	1,582	1,647	1,599
24	1,558	1,542	1,534	1,561	1,545	1,541	1,575	1,584	1,508	1,592	1,550	1,636
25	1,541	1,543	1,538	1,562	1,546	1,563	1,578	1,569	1,508	1,568	1,604	1,641
26	1,524	1,536	1,550	1,555	1,531	1,577	1,562	1,578	1,521	1,592	1,599	1,649
27	1,546	1,529	1,550	1,556	1,539	1,580	1,555	1,547	1,530	1,565	1,717	1,630
28	1,504	1,531	1,545	1,561	1,548	1,584	1,528	1,550	1,552	1,540	1,681	1,623
29	1,511		1,547	1,570	1,543	1,587	1,554	1,536	1,527	1,549	1,701	1,576
30	1,499		1,533	1,554	1,554	1,563	1,546	1,566	1,550	1,626	1,684	1,574
31	1,506		1,543		1,560		1,569	1,569		1,580		1,559

Table 3 -- Incinerator Operating Combustion Temperatures

Table Notes:

"Incinerator operating combustion temperature is the arithmetic mean of the temperature readings in the hottest zone of the furnace recorded in a day (24 hours) when the temperature is averaged and recorded at least hourly during the hours the incinerator operates in a day." (40 CFR Part 503.41(i))

Accordingly, Table 3 lists daily average temperature readings for the hottest incinerator hearth during the time periods when biosolids are being incinerated. Blank cell indicate days when biosolids were not incinerated. The average hearth temperature is the average of the readings from three thermocouples in that hearth. Temperature readings are recorded by the SCADA system once every minute.

Table 4 - Total Scrubber Differentials

Table 4.A.

The following table includes the highest 15 minute average value for the month, the lowest 15 minute average value for the month and the average of all "instantaneous" readings collected in the SCADA database for the month. This gives the best overall representation of ongoing normal operation of the scrubber. A 15-minute average scrubber pressure drop is calculated by SCADA every three minutes throughout the day from samples taken every 30 seconds. This report only includes values from time periods during which biosolids are being incinerated; values from when the incinerator is in warm standby mode are not included.

Total Scrubber Differential (inches H20)

	Jan '13	Feb '13	Mar '13	Apr '13	May '13	Jun '13
Maximum	27.01	26.78	26.99	26.01	26.71	26.41
Minimum	15.34	17.35	17.84	17.58	18.43	18.92
Average	22.27	22.98	22.93	23.10	23.27	23.05

	Jul '13	Aug '13	Sep '13	Oct '13	Nov '13	Dec '13
Maximum	26.97	28.97	27.97	27.17	27.36	25.85
Minimum	13.00	15.11	13.00	15.12	16.86	13.00
Average	23.06	22.80	23.29	22.76	21.94	21.53

Table 4 - Total Scrubber Differentials

Table 4.B.

The following table is a record of average scrubber pressure drop for each period of 15 minutes duration or more during which the average pressure drop was less than 16.83 inches of water. This is the best indication of improper performance of the air pollution control device according to the Subpart O derived permit condition in the Asplund Air Operating Permit. This report only includes values from time periods during which biosolids are being incinerated; values from when the incinerator is in warm standby mode are not included.

Air Scrubber Pressure Average Less Than 16.83 inches of water				
Event Date	Start Time	End Time	Duration (Min)	Avg (inches of H2O)
1/8/2013	13:35	13:41	6	16.72
1/8/2013	14:14	14:44	30	16.33
1/8/2013	16:11	16:26	15	16.23
1/8/2013	17:14	17:20	6	16.68
1/8/2013	17:41	17:59	18	15.95
1/8/2013	18:32	18:38	6	16.75
1/8/2013	19:05	19:23	18	16.12
7/16/2013	21:55	22:17	22	13.05
7/28/2013	16:40	16:56	16	15.89
8/20/2013	17:03	17:05	2	15.11
8/25/2013	11:03	11:06	3	16.78
9/17/2013	14:02	14:23	21	13.00
9/17/2013	14:30	14:54	24	13.00
10/29/2013	00:07	00:23	16	15.44
10/29/2013	00:28	00:40	12	16.05
12/2/2013	18:04	18:10	6	15.78
12/15/2013	05:40	05:58	18	16.53
12/15/2013	06:40	07:46	66	16.22
12/15/2013	08:16	08:46	30	15.32
12/20/2013	11:25	11:37	12	16.29
12/22/2013	09:13	09:40	27	16.49
12/22/2013	10:12	10:14	2	16.58
12/29/2013	09:25	09:37	12	16.57
12/29/2013	10:22	10:53	31	13.35

Table 5 - Amount of Sludge Delivered to Anchorage Regional Landfill

Monthly Total Dry Tons

Jan '13	Feb '13	Mar '13	Apr '13	May '13	Jun '13

Jul '13	Aug '13	Sep '13	Oct '13	Nov '13	Dec '13
				161.80	

Yearly Total Dry Tons

161.80

Table Notes:

In accordance with 40 CFR Part 503.9 General definitions: Asplund "sewage sludge" includes scum and solids removed during the primary treatment process; it does not include incinerator ash or grit and screenings removed during preliminary treatment.